CODIB-D-41
8 July 1959

U N I T E D S T A T E S I N T E L L I G E N C E B O A R D

COMMITTEE ON DOCUMENTATION

MEMORANDUM FOR: Assistant Director/Central Reference

SUBJECT: Trip Report

1. The following is my report of the seminars attended at the National Machine Accountants Association National Convention held in St. Louis, Mo. on 24-26 June, 1959.

2. The first seminar I attended was a closed circuit telecast from three data processing installations, namely, ACIC, St. Louis; Monsanto Chemical Co., St. Louis; and Blue Cross-Blue Shield, Detroit.

3. The computer at ACIC is a Burroughs Datatron 220. The equipment is currently being used to compile and distribute work load data, material and labor cost information and chart plotting using two Benson-Lehner plotters. In addition to this application, a perpetual chart inventory system is being planned. ACIC is anticipating complete automation of the total cartographic process in four to five years. The present number of programs for the machine is 32 with expansion to 200 expected within two years. The systems study and analysis took approximately two years prior to installation. The combination of data processing and scientific computation needs was the basis for the decision to acquire the Datatron 220. The installation has been in operation for about two months. Down time on the computer has averaged less than 2% with no down time on the tape units.

4. The first commercial use of the IBM 702 was made at Monsanto Chemical in St. Louis in 1948. It has been used for all the accounting processes: inventory control, payroll, etc. There are approximately 250 operating programs at the present time. The 305 Ramac is being installed and a 7070 system is contracted for 1961. Their planning includes some categories of scientific computation. No decision has been reached to shelve the 702 after installation of the 7070 system.

5. The most interesting presentation was the Minneapolis-Honeywell Datamatic 1000 at Blue Cross in Detroit. This application includes the record keeping functions of two basic records for each of the 1,300,000 subscribers. Each set of records produces a different set of tapes, one

set being a member status record tape and the other a billing payment tape or tapes. The member status tape records are adjusted daily and interrogated for such things as kind of coverage, number of members and determination of liability. The second set of tapes is used to prepare billings for subscription charges and to distribute the income at the end of each month into earned and unearned type of contract.

6. Approximately 30,000 transactions or inquiries per day will be run against these two sets of tapes to update and prepare printed reports. The record tapes will contain, when all records are converted to tape, a total of 600,000,000 characters. Each reel of tape contains 200,000 records and can be updated in 12 minutes. The tape is 3 inches wide and the cost is $675.00 per reel. I understood the tape length to be 2,400 feet. This installation covers 5,000 square feet with an additional 500 square feet for the eight maintenance engineers (four per shift). The air conditioning requirement is 70 tons.

7. A few notes on Blue Cross programmers and programming.

a. They employ 14 programmers selected from the group of 40 recruited from within the organization to take the programming course given by the manufacturer or other programming schools.

b. The minimum amount of training for this work is seven months.

c. Two Datamatic representatives are assigned full time to assist in the programming.

d. Special emphasis was placed on the time required to make changes in the programs. No changes are made immediately, and none made without careful study.

8. The Thursday morning seminar was entitled "Carrying Through with Automation".

a. The first speaker was Mr. Ellsworth Seitz, Chief, Systems Division, Transportation Supply and Maintenance Corps. Their computer is an IBM 705-III, and the application is primarily inventory control with some additional general accounting procedures such as payroll. The T/O is made up of two groups of fifty people, half programmers and half systems analysts.

b. Their educational program consists of the regular four week IBM course for programmers and a two week machine course for

systems analysts as a beginning. In addition to this, they conduct interdepartmental courses of study with instructors from the ADP group. An outline of these courses is attached. (on file ADG/CIA)

c. Mr. Seitz stated emphatically that a continuing educational program is necessary for all participating personnel, not just programmers and analysts, in order to reach the optimum in programming and equipment utilization.

9. Mr. G. W. Gregory, Director of Computer processing of SPAN Data Processing Center was the next speaker. This is a processing unit established by four leading insurance companies to do their accounting. His subject was "Conversion". This turned out to be a very detailed explanation of the conversion by the four companies to a common punched card format. The two main points of interest being:

a. Conversion from punch card to tape is a rather slow process.

b. If punched card is the input to the computer, the standardization of format is absolutely necessary. This is especially true in a computer center operation.

10. The next subject was "Shakedown, Debugging and Refinements". The speaker was Mr. R. L. Bergman, Assistant Manager, Data Processing, McDonnel Aircraft Corp. They are using an IBM 705 and have 150 programs used for payroll and labor distribution statistics. Mr. Bergman named the following items as being most important prior to installation:

a. Adequate systems study.

b.. Selection and training of proper personnel. He recommended selection of operating personnel from present EAM staff because they are schooled in the proper disciplines for the conversion.

c. Selection of proper equipment for the applications.

d. Detailed planning for the conversion.

He also stated that 50% of the program preparation time is spent in testing and debugging. The program shakedown is extremely slow, and continuing program refinements are necessary if full capacity of the equipment is to be reached. Another point he emphasized was that all

programming should be under a single supervision. The reason for this is the standardization necessary in all programs. He does not feel that this is essential in the case of systems analysts; however, they should work closely with the programmers.

11. The next speaker was Mr. J. C. Fischer, Superintendent of Data Processing, Buick Division of General Motors. The system is IBM 705 and the application is inventory control. His presentation was shortened due to lack of time. He did stress the following points.

a. Evaluate the equipment for an overall effect instead of for one or two individual applications.

b. Evaluate applications now on the equipment.

c. Evaluate applications being programmed.

d. Evaluate application under study to be programmed.

12. All speakers said that their equipment was not justified by actual monetary savings. They also said that the equipment should be selected on the basis of the application. Each man was asked why he chose the equipment being used and the answer given above was the same in every case.

13. The afternoon seminar on Thursday was "Management Decisions for Automation". The speakers were: R. A. Gilbert, Manager of Administrative Services, McDonnel Aircraft; Colonel J. V. Sollohub, Chief, Engineer Supply Control Office; E. W. Runge, Controller, Missouri Pacific Railroad Co.; and E. Hoover Duff, Controller, Cupples Mfg. Co. Areas covered in the discussions were: Selection of Automation Team, Determining Equipment Needs, Why Automate and What to Automate. The following are some highlights of the discussion:

a. In 1958 over 40% of computer users were disappointed in the results obtained but only a few machines were returned. Some reasons for this are: (1) Failure to fully test and analyze the system before purchasing equipment; (2) Attempts to put too many small volume jobs on the machinery; (3) Too much reliance in management consultants and manufacturers representatives.

b. Know exactly what is going to be programmed for a computer, have the automation team selected and trained and be well along with programming before equipment installation. This is almost a verbatum repeat of the speakers in the first seminar.

c. An aptitude for computers and automation is a must for programmers and operators. The manufacturers have several very good tests for assisting in this determination.

d. Accept the fact that some of the organizations personnel will never adapt themselves to computer and automation techniques. These people must be replaced.

e. Never try to sell top management the idea that machines of this type will eliminate people. Usually the opposite is true.

f. The conversion to computers results in some loss of flexibility. Regardless of the faults in the present system of a company it is still much more flexible than a completely automated system. This is caused, in part, by the inability to make rapid changes in programs.

g. The closing remark of the panel moderator was, "A computer expert is one who has not yet had his computer delivered."

14. On Friday, Dr. DeCarlos of IBM gave a presentation on the future in electronics at IBM. Dr. DeCarlos expects radical changes in input-output equipment in the next two to three years. He did not elaborate in this. He expects ferrite cores to be the memory units for the next four or five years. They are working on a so called thin film magnetic dot. Some idea of the size can be gained from the fact that about 1,000 can be placed on a dime. This looks like a replacement for the ferrite core.

a. In the past IBM has experienced some difficulty with customers due to the fact that the programming techniques for new equipment were not complete. No new equipment will be announced until the complete programming system has been checked. This could cause delays in announcements of from three to six months.

b. Dr. DeCarlos is anticipating a substantial increase in the use of film as a storage medium in the next five years. He feels that this is inevitable because of the capability of dense packing on film. There are still many problems in the technology, but several companies are concentrating heavily in this field.

CODIB-D-41
8 July 1959

c. In answer to a question on magnetic tape speed he said there is no technical problem in moving tape faster than the present equipment can compute. He expects the speed of tape movement to be doubled within the next two years. IBM is now experimenting with read/write times of two microseconds with the possibility of one half microsecond minimum.

d. The final few minutes were used to do a little "blue sky" theorizing on such things as a billion bit memory unit using a liquid, such as alcohol, with an error rate of one in 10^{33} times; also, the possibility of absolute reliability in a computer. This is possible in the electronics today but such things as cams and relays will always be a problem. He also touched briefly on a universal language stating that IBM now has about 60 programmers working on the problem.

e. The entire presentation was supported by a satirical film produced by the St. Louis Chapter of the NAA. This film humorously illustrates how not to organize an automation system.

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Chief, Automation Development Group/CR

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CODIB-D-40
1 July 1959

U N I T E D S T A T E S I N T E L L I G E N C E B O A R D

COMMITTEE ON DOCUMENTATION

MEMORANDUM FOR: Committee on Documentation

SUBJECT : General Electric AFCIN Subsystem Design

1. The following study series has been submitted by the AFCIN representative for CODIB consideration in accordance with policy paper CODIB-D-26 on compatibility:

Volume one:	Proposed subsystem design approach	(SECRET)
two:	Input/output characteristics	(TOP SECRET)
three:	Long-range guidance	(SECRET)
four:	An evaluation of Minicard (AN/GSQ-11)	(SECRET)

2. To accommodate to the limited supply of copies of this study, members other than those listed on the dissemination below are asked to consult copies held by the CODIB Secretary.

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Dissemination: State, ACSI, ONI, NSA -
1 set each -
Vols. 1, 3 & 4 attached
Vol. 2 forwarded via TOP SECRET channels

This document downgraded to FOR OFFICIAL USE ONLY when separated from classified enclosures.

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